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Appl. No.	:	Unknown
Examiner	:	Nguyen, Kiet T.
Docket No.	:	10980322-7

Amendments to the Claims

Please cancel claims 1-33 and insert the following new claims 34-50.

1-33. (Cancelled)

34. (New) An ionization source for mass spectrometry comprising:

an ionization enclosure comprising means for maintaining the enclosure at a pressure greater than 100 m Torr and means for containing an analyte in a matrix at an ambient pressure of the enclosure;

a pulsed laser positioned to direct laser energy onto the matrix within the ionization enclosure, wherein the laser energy is at a wavelength absorbed by the matrix and yields simultaneous desorption and ionization of the analyte;

means for directing analyte ions away from the matrix to a passageway, wherein the passageway is configured to permit cooled analyte ions to enter the passageway that connects the ionization enclosure and a mass analyzer.

35. (New) The ionization source of claim 34 wherein a flowing liquid sample comprises the analyte and the matrix.

36. (New) The ionization source of claim 35 wherein the flowing liquid sample comprises the analyte and the matrix.

37. (New) The ionization source of claim 35 wherein the flowing liquid sample is the effluent from an HPLC, CE, or syringe pump.

38. (New) The ionization source of claim 34 wherein the matrix is static.

39. (New) The ionization source of claim 34 wherein the matrix and a sample are located on a holder within the ionization enclosure.

40. (New) The ionization source of claim 34 wherein the analyte in the sample is selected from the group consisting of DNA, RNA, lipid, peptide, protein, and carbohydrate, or fragments thereof, and combinations thereof.

41. (New) The ionization source of claim 40 wherein the protein is digested.

42. (New) The ionization source of claim 39 wherein the holder is selected from the group consisting of a surface, a microtitre plate, a microchip array, a thin-layer

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chromatography plates, an electrophoresis gel, and a membrane, or combinations thereof.

43. (New) The ionization source of claim 38 wherein the analyte contained in the static matrix is selected from the group consisting of DNA, RNA, lipids, peptides, protein, and carbohydrates.

44. (New) The ionization source of claim 43 wherein the protein is digested.

45. (New) The ionization source of claim 34 wherein the pressure greater than 100 mTorr is selected from the group consisting of between 100 mTorr and 1 Torr, between 1 Torr and 760 Torr, between 1 Torr and 100 Torr, and between 100 m Torr and 760 Torr.

46. (New) The ionization source of claim 34 wherein the ionization enclosure contains an introduced gas selected from the group consisting of helium, nitrogen, argon, oxygen and carbon dioxide.

47. (New) The ionization source of claim 34 where the ionization source operates between -20°C and 100°C.

48. (New) The ionization source of claim 34 wherein the pulsed laser source includes means associated with the ionization enclosure for directing the laser onto the matrix.

49. (New) The ionization source of claim 47 where the means for directing analyte ions to the passageway comprises a potential gradient.

50. (New) The ionization source of claim 34 wherein the means for directing analyte ions away from the matrix to the passageway comprises of a gas flow.

51. (New) The ionization source of claim 34 further comprising the passageway integrally connected to the ionization source for delivering analyte ions to the mass analyzer wherein the passageway comprises an ion transport guide.

52. (New) The ionization source of claim 50 wherein the ion transport guide includes at least one ion optic selected from the group consisting of a multiple ion guide, an orifice, a capillary, a skimmer, and a lens, and combinations thereof.

53. (New) The ionization source of claim 50 wherein the passageway is integrally connected to both the ambient pressure of the ionization source and a vacuum of the mass analyzer.

54. (New) The ionization source of claim 53 wherein the mass analyzer is selected from the group consisting of ion trap, quadrupole, ion cyclotron resonance, Fourier

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transform ion cyclotron resource, magnetic sector, electric sector, and quadrupole time of flight, and combinations thereof.